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WATERSHED DEVELOPMENT UPON RURAL
COMMUNITY GROUPS

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Upon Rural Community Groups*

By

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Rural areas of the state and nation have traditionally been the sites of large-scale water impoundment projects. The probability is also quite high that non-metropolitan areas will remain logical sites for lake construction due to the low density of population in rural areas and lower land values in comparison to urban areas. Impoundment projects often require extensive land acquisition and necessitate relocation of residents within the basin area. It should follow that watershed development in less densely populated areas will require fewer people to relocate their established homes when compared with comparable sites in compacted urban communities.

It is highly probable that as our society continues to increase in size and complexity, both socially and economically, the demand for adequate water supplies will be considerably expanded which suggests that new water supplies must be developed to meet the anticipated demand. A recent Presidential Commission on Rural Poverty,¹ for example, noted

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¹The President's National Advisory Commission on Rural Poverty, The People Left Behind, 1967, p. 135.

that the demand for municipal and industrial water supplies will triple by the year 2000. Since water resource developmental agencies such as the Ohio Department of Natural Resources and the United States Army Corps of Engineers attempt to minimize the physical relocation of population due to watershed development, relatively less densely populated rural areas of the state and region will be subjected to land acquisition and population relocation.

The impact of the continued expansion of water impoundment development is of special significance to rural fringe areas of larger metropolitan areas since increasing population and industrial expansion will accelerate the need for large quantities of water. It is often economically undesirable to transport large volumes of water over considerable distances when potential sources are in closer proximity, therefore, rural properties in adjacent areas which may be developed for water supplies will probably be given priority as site locations. The conclusion to be drawn from this sequence of logic is that rural fringe areas will probably experience considerable watershed development in the future as the demand for water increases.

Assumptions Made About Water Impoundment Projects

It is often assumed that watershed projects will enhance the social and economic viability of the region. Agencies such as the United States Army Corps of Engineers carefully document the potential cost-benefit factors of proposed projects.² Water resource developmental agencies con-

²House Document No. 587, Scioto River Basin, Ohio, U.S. Government Printing Office 1962. Also see Water Resource Development, Ohio, U.S. Army Corps of Engineers, January 1969.

sider the flood control aspects of the proposed projects, the potential increase in usable water supplies, the potential recreational utilization of the projects and note what the economic return for the capital investment will probably be on a long-run basis. Cost-benefit analysis, in essence, is the estimate of benefits accruing from capital investment in watershed development.

The assumption that regional growth will result from carefully planned water resource development is probably valid since groups denied access to adequate sources of high quality water will be limited in terms of economic and social growth. If adequate water sources are not available, it is obvious that economic and social growth which is partially dependent upon water supply will not occur. Population expansion, for example, would be severely restricted in communities without adequate water sources. While the long-run regional increase in economic and social viability from watershed development is rather apparent, the effects of impoundment projects and subsequent relocation and community disruption upon directly affected community groups is not so easily assumed to be favorable. Physical displacement of a portion of a community will undoubtedly have some type of disruptive influence upon the social cohesiveness of the group. The purpose of this article is to discuss the social-psychological impact of watershed development and subsequent relocation of population upon rural community groups.

Rural Community Before Disruption

People within rural communities establish patterns of interaction which are functional for their particular social situation. They establish friendships and attachment to the other members of the community

group and to the area. These interaction patterns become standardized or become the way people perceive that things should be done within the group.

If change is implemented within such groups, especially change implemented by external groups (Corps of Engineers, for example), the interaction patterns may become disrupted. If the change results in severe social disruption, the individuals within the affected group may develop negative attitudes about the changing social situation to the extent that they become alienated from the changed community. Alienation was defined in this study as a feeling of self-estrangement from the group, negative attitudes toward the community's leadership, personal estrangement from the community to the extent that the inhabitants do not perceive the community as a desirable place in which to live, and a feeling that the changed community cannot satisfy their perceived needs. These factors can be summarized by the statement that community disruption due to physical displacement of community members will change the existing social situation to the extent that the residents of the affected community become alienated. The hypothesis for testing which was derived from this theoretical position was: Community groups affected by watershed development which results in forced relocation of population will exhibit higher degrees of community alienation than non-affected community groups.

Methodology

A study was organized to test the hypothesis that watershed development would result in an alienated population. Four communities which were disrupted by watershed development were sampled on a systematic random

sample basis. The distribution of the sample is presented in Table 1. Two of the communities were in the initial stages of development (properties were being acquired by the state at the time of the study) while the projects in the other two communities had been completed at the time of the study. Two of the affected communities were located in the State of West Virginia and two in the State of Ohio. A base group was drawn from a non-affected community in each state for comparative purposes using the systematic sampling technique.

Table 1

Number of Subjects Included in the Sample for the Three
Ohio and Three West Virginia Communities By Stage of
Development During Time of Study

	Stage of Development		
	Land Acquisition In Progress	Project Completed	Non-Affected Base Group
W. Virginia Communities	60	64	46
Ohio Communities	60	60	50

The projects chosen for inclusion in the study were carefully selected to enhance the comparability of the community groups. The variables used in the selection process were as follows: age structure, occupation, educational achievement, population size and income. Potential projects were also evaluated on the number of people to be displaced. The number of people displaced or to be displaced by each impoundment project selected were approximately equal. The rigorous selection process was deemed very important to control for exogeneous factors as much as possible.

Inspection of the demographic data collected from the respondents in each community revealed that the individuals randomly selected possessed the following characteristics: the people were long-term residents of their respective communities, the people were predominately blue collar workers, approximately half of those employed worked outside of their communities, the greatest majority were home owners, and the socio-economic status of the community groups was lower middle class.

Due to the research design and the selection process, it is argued that significant differences among the groups can be directly or indirectly attributed to the stimulus of watershed development.

Instrument Construction

An alienation attitudinal scale was constructed and pre-tested using a group of rural Ohio State University students. The original scale was modified to test attitudes toward the community and administered to the selected community groups. The individual responses to the alienation scale were subjected to internal consistency item analysis which resulted in a reliability measure of .91 which can be interpreted as a highly reliable instrument. Construct validity was the principle validation technique. The scale consisted of twenty-one Likert-type items which were developed to measure the affected groups' attitudes toward community leadership, other people in the group, personal estrangement from the community and basic satisfaction with the community. There were five possible responses to each item. The possible responses were: strongly agree, agree, undecided, disagree and strongly disagree. The items were scored on a 1 to 5 basis and the item values were summated to provide a measure of an individual's degree of community alienation. The possible

range of scores was from twenty-one (completely non-alienated) to one hundred-five (completely alienated). The median possible score was sixty-three.

Examples of the type of items included in the alienation scale were:

- A. I definitely like this community.
- B. I am not important as a person in this community.
- C. I do not believe this community will prosper.
- D. Most of the leaders of this community respond to the needs of the community members.
- E. This community is a good place in which to live.
- F. Most elected officials cannot be trusted.

Do Rural Community Groups Become Alienated From Their
Community As A Result of Watershed Development?

The analysis of variance findings which are presented in Table 2 revealed no significant differences among the Ohio groups. Table 3 presents the analysis of variance findings for the West Virginia groups and demonstrated significant differences among the groups. The mean alienation scores for all of the community groups, however, were considerably below the median point of sixty-three on the non-alienation-alienation continuum. This indicates that community alienation as it was defined and operationalized in the research did not occur.

Subsequent t-tests for difference between means revealed that neither of the affected Ohio community groups differed significantly from the Ohio base group. T-tests for the West Virginia groups demonstrated that Community C did not differ from the West Virginia base but that Community D was significantly different from the non-affected base. These findings

Table 2

Summary Analysis of Variance Statistics for
The Affected Ohio Communities

Treatment Group	Community A*	Community B**	Ohio Base Group
Sample Size	60	60	50
Mean	48.7	46.7	49.1
Standard Deviation	11.5	6.9	9.5

The F-Ratio was 1.05 which was not significant at the .05 level.

*Community A was in the initial stages of relocation at the time of the study.

**The watershed project had been completed in Community B at the time of the study.

Table 3

Summary Analysis of Variance Statistics for the
Affected West Virginia Communities

	Community C*	Community D**	West Virginia Base Group
Sample Size	60	64	46
Mean Alienacion Score	44.6	52.4	46.2
Standard Deviation	13.3	11.1	11.1

The F-Ratio was 7.27 which was significant at the .001 level.

*Community C was in the initial stages of relocation at the time of the study.

**The watershed project had been completed in Community D at the time of the study.

show that Community D was more alienated than the other groups, however, the people in Community D could not be considered alienated since the mean alienation score was below the median possible score of 63. A possible explanation of the variance of this particular group may have been the labor disputes which occurred between the project contracting firm and the local residents. The labor disputes resulted in the development of factions within the community which tended to disrupt the social cohesiveness of the group. The social unrest of the situation was not conducive to mutual trust and cooperative efforts.

The findings revealed that watershed development which necessitated considerable population relocation did not alienate the residents from their changing communities. This does not mean, however, that considerable negative attitudes toward the impoundment development were not present among the affected groups. Open-ended questions designed to permit people to express their feeling about the relocation demonstrated that the affected people had considerable negative attitudes about specific aspects of the relocation and subsequent community disruption.

One of the most frequently mentioned negative aspects of physical relocation was the severance of the people from their established homes and farm operations. It is not easy to adequately compensate people for their sentiments such as their attachment to a farm which has been operated by the family for generations. This feeling can best be described by the often articulated phrase "how do you replace memories?". Many of the people were reared on the appropriated farms and had reared their families there as well which increased the sentimental attachment to the properties.

Another important factor which led to the development of negative attitudes about watershed development was the inflated property values

in surrounding areas. The basic economic principles of supply and demand should suffice to demonstrate that if the relocated people desired to remain in the area, they were required to pay the inflated costs in surrounding areas for comparable properties. The demand for land increased while the supply remained fixed resulting in higher property values. Approximately 36 percent of the relocated group indicated that an increased payment for acquired properties would have been helpful due to the surrounding inflated property values. The inflation of land values was of significant importance for farm operators who require considerable acreage. Approximately 28 percent of the relocated group noted that securing comparable housing was a severe problem which added to the burden of relocating established homes. This is due to the relative lack of adequate unoccupied housing in rural areas.

The combination of these and other factors tend to create a situation that is perceived in a negative manner by the affected people. Efforts should be made by the developmental agency to reduce the negative aspects of physical displacement and resettlement which should result in a lessening of the problems associated with forced relocation of population.

In summary, the research findings did not support the commonly held position that watershed development will destroy people's perception of their community. It was noted, however, that physical displacement and subsequent community disruption did lead to considerable negative attitudes among the affected groups.